AMENDMENTS TO THE CLAIMS

1. (Original) A method for removing impurities from waste water by electroflotation, the method comprising the steps of

- passing the waste water to be cleaned through an electrolytic cell (28) provided with two metal electrodes (1,2) of different electroonegativities
- performing electrolysis between the two electrodes (1,2), such that the more electronegative electrode (1), which is non-wearing in a cleaning process, is used for producing hydrogen gas and hydroxyl ions from water, and that the less electronegative electrode (2), which is an active, wearing electrode in a cleaning process, is used for producing metal ions in a solution to be cleaned, **characterized** in that the method further comprises the combination of following steps:
- controlling the cell current by automation at the point of cell's resonance energy to produce a strictly controlled electric field in the cell
- effecting in the cell in the strictly controlled electric field a desired oxidation
- reduction reaction for removing one or more designated impurities from water to be cleaned
- feeding the mass flow from the cell to a separation tower (30) of a flock and purified water
- using coaxial pipes as electrodes, the inner electrode pipe being the more electronegative electrode (1), having holes, and
- feeding flush water intermittently through the inner electrode pipe by pressure for producing flush water sprays through the holes against inner surface of the outer electrode pipe.

2. (Original) A method as set forth in claim 1 for removing nitrogen from waste water, **characterized** in that

(a) in electrolysis, hydrogen ions (H^+) are used for producing from ammonia (NH_3) ammonium ions (NH_4^+), which escape upon joining negative ions and upon coprecipitating with iron hydroxide precipitate;

(b) the precipitate is allowed to rise along with hydrogen gas in the form of flock to the surface of clean water in the flock separation tower (30);
and

(c) in electrolysis, iron is oxidized and NH_4^+ nitrogen and/or nitrate nitrogen (NO_3) is reduced as follows

$$Fe + NH_4^+OH^- \Leftrightarrow FeO\downarrow + 2\ ½\ H_2\uparrow + ½\ N_2\uparrow$$

and/or

$$6Fe + 2H^+ + 2NO_3 \Leftrightarrow 6FeO\downarrow + N_2\uparrow + H2\uparrow$$

whereby the result is denitrification as nitrogen escapes from waste water in the form of nitrogen gas.

3. (Original) A method according to claim 1, where the waste water is landfill seepage or some other salt-containing waste water, such as a contaminated sea water.

4. (Original) A method according to claim 3, **characterized** in that the seepage or other salt-containing waste water to be cleaned is conducted in a first stage through a first electrolytic cell, and in a second stage the water partially cleaned in the first stage of conducted through a second electrolytic cell.

5. (Currently Amended) A method as set forth in ~~any of claims 1-4~~ claim 1, **characterized** in that the less electronegative electrode is made of iron or aluminum.

6. (Currently Amended) ~~A~~ An apparatus for removing impurities from waste water by electroflotation, said apparatus comprising a set of electrolytic cells, each cell thereof being provided with one or more metal electrodes (2) coupled with the positive pole of power source and one or more metal electrodes (1) coupled with the negative pole of a power source, and an electrolysis space (5) between the electrodes, the electrode (1)

connected to the negative pole of a power source being made at least in its surface layer from a more electronegative material than the electrode (2) connected to the positive pole, the more electronegative electrode (1) being non-wearing in a cleaning process and releasing only electrons received thereby into a solution to be cleaned, and the less electronegative electrode being an active, wearing electrode in a cleaning process and releasing metal ions into a solution to be cleaned, the electrodes (1, 2) having such an electronegativity difference that a desired oxidation-reduction reaction is achieved, **characterized** by the combination of

- automation for controlling the cell current at the point of cell's resonance energy, thereby enabling a desired oxidation-reduction reaction in the cell in a strictly controlled electric field
- a separation tower (30) of a flock and purified water
- a pump (27) for pumping a mass flow through the cell (28), as a closed continuous flow, to the separation tower (30)
- coaxial pipes as the electrodes (1, 2), the inner electrode pipe being the more electronegative electrode (1) and having holes (4), and
- flushing means (16-20) for feeding flush water intermittently through the inner electrode pipe by pressure for producing flush water sprays through the holes (4) against inner surface of the outer electrode pipe (2).

7. (Original) An apparatus as set forth in claim 6, **characterized** in that the less electronegative electrode is made of iron or aluminum, the iron or aluminum pipe (2) being the outermost and readily replaceable.

8. (Original) An apparatus as set forth in claim 7, **characterized** in that the outer electrode pipe (2) terminates prior to a waster water inlet (6), while the inner pipe (1) continues past the waster water inlet (6) by way of a valve (18) to a wash water pump (19).

9. (Original) An apparatus as set forth in claim 8, **characterized** in that the valve (18) has its opening and the wash water pump (19) has its actuation controlled to proceed

intermittently, while a valve (17) in an outlet duct (16) connected to the bottom end of the electrolysis space (5) is adapted to be opened for discharging precipitate and wash water from the electrolysis space (5).

10. (Currently Amended) An apparatus as set forth in ~~any of claims 7-9~~ claim 7, **characterized** in that the inner electrode pipe (1) is made of stainless steel and the iron- or aluminum- made outer electrode pipe (2) is covered with an insulating housing tube (3).

11. (Currently Amended) An apparatus as set forth in ~~any of claims 7-10~~ claim 7, **characterized** in that the electrode pipes (1, 2) are locked concentrically to each other by means of unscrewable end caps (10, 15), which surround the ends of the inner electrode pipe (1) and inside which are retained the ends of the outer electrode pipe (2).

12. (New) A method as set forth in claim 2, **characterized** in that the less electronegative electrode is made of iron or aluminum.

13. (New) A method as set forth in claim 3, **characterized** in that the less electronegative electrode is made of iron or aluminum.

14. (New) A method as set forth in claim 4, **characterized** in that the less electronegative electrode is made of iron or aluminum.

15. (New) An apparatus as set forth in claim 8, **characterized** in that the inner electrode pipe (1) is made of stainless steel and the iron- or aluminum- made outer electrode pipe (2) is covered with an insulating housing tube (3).

16. (New) An apparatus as set forth in claim 9, **characterized** in that the inner electrode pipe (1) is made of stainless steel and the iron- or aluminum- made outer electrode pipe (2) is covered with an insulating housing tube (3).

17. (New) An apparatus as set forth in claim 8, **characterized** in that the electrode pipes (1, 2) are locked concentrically to each other by means of unscrewable end caps (10, 15),

which surround the ends of the inner electrode pipe (1) and inside which are retained the ends of the outer electrode pipe (2).

18. (New) An apparatus as set forth in claim 9, **characterized** in that the electrode pipes (1, 2) are locked concentrically to each other by means of unscrewable end caps (10, 15), which surround the ends of the inner electrode pipe (1) and inside which are retained the ends of the outer electrode pipe (2).

19. (New) An apparatus as set forth in claim 10, **characterized** in that the electrode pipes (1, 2) are locked concentrically to each other by means of unscrewable end caps (10, 15), which surround the ends of the inner electrode pipe (1) and inside which are retained the ends of the outer electrode pipe (2).

20. (New) An apparatus as set forth in claim 15, **characterized** in that the electrode pipes (1, 2) are locked concentrically to each other by means of unscrewable end caps (10, 15), which surround the ends of the inner electrode pipe (1) and inside which are retained the ends of the outer electrode pipe (2).